MAY/JUNE 1983

Chilton's TRUCK & OFF-HIGHWAY INDUSTRIES

COMPLETE FARM TRACTOR SPECS

C 2150-5 5/18/83

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HIGH·TECH DOWN ON THE FARM

P.I.K. · PROGRAM · CULTIVATES · CONTROVERSY

Chilton's

May/June, 1983

Volume 4 Number 3

TRUCK & OFF-HIGHWAY INDUSTRIES

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Ford's latest TW Series farm tractors + Dickey-John's electronics = high tech farming.

NEXT ISSUE

Specs and design news of the 'internationalized' lift-truck market come your way next.

abc

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HEAVY-DUTY STATISTICS

AGRICULTURAL EQUIPMENT PRICE INDICES

Producer Prices (1967=100)

Year	Ag. Mach. & Equip.	% Change	Tractors	% Change	Ag. Mach. Excluding Tractors	% Change	Combines	% Change
1977	197.9		202.7		201.7		186.3*	
1978	213.1	+ 7.7%	218.0	+12.6%	219.1	+ 8.6%	212.0	+13.8%
1979	232.1	+17.3	240.1	+10.1	239.7	+ 9.4	235.4	+11.0
1980	259.2	+11.7	276.2	+15.0	267.0	+11.4	263.1	+11.8
1981	288.3	+11.2	311.5	+12.8	295.6	+10.7	287.8	+ 9.4
1982								
Jan	303.1	+ 9.7	333.6	+20.4	310.5	+ 8.6	307.2	+ 9.6
Feb	304.6	+ 9.4	333.6	+19.2	312.4	+ 8.7	312.2	+11.4
Mar	306.4	+ 9.5	338.2	+20.7	313.5	+ 8.4	312.2	+11.4
Apr	306.8	+ 8.6	338.2	+18.9	314.3	+ 8.2	312.2	+11.4
May	308.2	+ 7.9	340.3	+17.0	315.7	+ 4.9	311.9	+11.2
Jun	308.8	+ 7.8	339.3	+16.6	316.0	+ 7.8	301.7	+ 7.1
Jul	311.0	+ 7.9	341.9	+16.8	318.6	+ 7.9	311.9	+10.7
Aug	311.4	+ 7.3	339.2	+15.2	318.6	+ 7.2	301.7	+ 4.7
Sep	313.6	+ 7.1	345.1	+15.9	319.0	+ 6.4	301.7	+ 4.7
Oct	317.0	+ 7.3	348.3	+14.8	324.2	+ 7.9	308.7	+ 6.0
Nov	318.1	+ 5.6	348.3	+12.8	326.3	+ 6.4	315.1	+ 3.5
Year to Date % Change		+ 8.0		+17.0		+ 7.8		+ 8.0

* (1970=100)

Source: U.S. Department of Labor Bureau of Labor Statistics.

Robert W. Baird & Co. Inc.

Prices are moderating in the agricultural pricing sector, even though tractor prices increased 17% through November and combines went up 8% in the first eleven months of '82.

The report forecasts a rebound in shipments of construction machinery and equipment in '83. The study also concludes that improving cash flow and better contracting activity in '83 could result in a very substantial gain in '84.

Single copies of this article are free. Circle 504 on the Information Card. For reprint information contact TRUCK & OFF-HIGHWAY INDUSTRIES, Marketing Dept., Radnor, PA 19089

FORECAST FOR CONSTRUCTION MACHINERY AND EQUIPMENT (SIC 3531)

($ Billions) — Forecasted 3531 Models

Year	Deflated Shipments	% Change
1968	$1.568	
1969	1.714	+ 9.3%
1970	1.590	− 7.2
1971	1.610	+ 1.3
1972	1.890	+17.4
1973	2.210	+18.5
1974	2.246	+ 1.6
1975	2.140	− 8.5
1976	2.015	− 5.8
1977	2.201	+ 9.2
1978	2.465	+12.0
1979	2.316	− 6.5
1980	1.964	−15.2
1981	1.813	− 7.7
1982E	1.134	−37.5
Forecast		
1983	1.314	+15.9

SIC Number and Name	
35311	Contractors Off-Highway Wheel Tractors
35312	Tracklaying Tractors
35314	Power Cranes, Draglines, Shovels
35315	Unassigned Number
35316	Mixers, Pavers, and Related Equipment
35317	Tractor Shovel Loaders
35318	Scrapers, Graders, Rollers, Trailers, etc.

Robert W. Baird & Co. Inc.

Year
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
Forecast
1982
1983

Farm machinery shipments declined more than 18% in '82 and should only increase 5% in '83. In real terms, shipments fell more than 24% in '82 with no increases anticipated for '83. High dealer inventories in the field and another poor year of cash receipts should preclude any significant production and shipment gains in '83.

FORECAST FOR FARM MACHINERY AND EQUIPMENT

($ Billions)

Deflated Shipments	% Change	Actual Shipments	% Change
$4.227		$ 4.357	
3.964	− 6.2%	4.233	− 2.8%
3.942	− 6.2	4.391	+ 3.7
3.968	+ 0.7	4.547	+ 3.6
4.698	+18.4	5.589	+22.9
5.620	+19.6	6.868	+22.9
6.203	+10.4	8.641	+25.8
6.036	− 2.7	9.883	+14.4
5.944	− 1.5	10.534	+ 6.6
5.683	− 4.4	10.905	+ 3.5
5.669	—	11.726	+ 7.5
6.208	+ 9.5	13.965	+19.1
5.380	−13.3	13.476	− 3.5
5.299	− 1.5	14.732	+ 9.3
4.013	−24.3	12.617	−18.1
4.025	—	13.247	+ 5.0

Robert W. Baird & Co. Inc.

FORECAST FOR MINING MACHINERY AND EQUIPMENT (SIC 3532)

Except Oil Field Machinery and Equipment

($ Billions)

Year	Deflated Shipments	% Change	Actual Shipments	% Change
1967	$0.622	−20.0%	$0.622	−17.4%
1968	0.498	+14.1	0.514	+15.6%
1969	0.568	+14.1	0.594	+17.2
1970	0.648	+18.8	0.696	+24.3
1971	0.770	−13.0	0.865	− 9.9
1972	0.670	+ 9.9	0.771	+13.6
1973	0.736	+14.3	0.876	+35.6
1974	0.841	+12.2	1.188	+43.3
1975	0.944	− 0.6	1.702	+14.0
1976	0.938	− 4.5	1.941	+ 2.9
1977	0.896	− 8.6	1.997	− 0.3
1978	0.819	− 2.2	1.992	+ 6.9
1979	0.801	+ 2.5	2.130	+14.8
1980	0.821	+ 4.9	2.445	+15.0
1981	0.861	− 2.0	2.812	+ 5.0
1982E	0.844		2.950	
Forecast 1983	0.899	+ 6.5	3.326	+12.7

Robert W. Baird & Co. Inc.

If there's a rebound in industrial production the study estimates a relatively healthy gain in '83. Baird expects more significant shipment gains in '84 as the economy gathers steam. Oil field machinery and equipment not carried in this SIC code can be found in the construction machinery category.

SELECTED CONSTRUCTION EQUIPMENT PRICE INDICES

Producer Prices (1967=100)

Year	Power Cranes, Excavators & Equip.	% Change	Mixers, Feeders, Spreaders Etc.	% Change	Crawler Type Tractors	% Change	Tractor Shovel Loaders*	% Change
1977	213.8		181.5		224.7		N.A.	
1978	230.1	+ 7.6%	194.1	+6.9%	248.2	+10.5%	N.A.	
1979	251.2	+ 9.2	211.1	+8.8	275.0	+10.8	N.A.	
1980	278.2	+10.7	229.6	+8.8	306.1	+11.3	100.0	
1981	300.9	+ 8.2	246.1	+7.2	334.9	+ 9.4	111.9	+11.9
1982								
Jan	314.1	+ 8.3	258.3	+6.9	354.3	+10.0	120.3	+17.3
Feb	314.0	+ 7.8	259.4	+7.1	357.5	+10.0	120.4	+12.3
Mar	317.8	+ 7.3	260.2	+7.1	358.0	+ 9.6	120.4	+11.7
Apr	319.3	+ 7.4	260.1	+6.8	359.9	+ 9.4	122.8	+10.9
May	320.9	+ 7.4	260.1	+6.0	364.5	+10.0	123.2	+10.8
Jun	320.9	+ 7.2	264.5	+6.8	364.4	+ 9.3	123.2	+10.5
Jul	323.4	+ 6.2	263.2	+8.1	367.4	+ 9.5	124.4	+ 9.6
Aug	324.7	+ 6.5	265.6	+8.9	367.4	+ 8.4	124.7	+ 9.6
Sep	324.8	+ 6.5	266.8	+9.4	372.8	+ 9.6	124.7	+ 8.9
Oct	324.8	+ 5.9	266.8	+8.9	372.8	+ 8.9	124.7	+ 6.9
Nov	325.2	+ 6.0	267.0	+4.3	373.4	+ 8.8	124.7	+ 6.9
Year to Date % Change		+ 6.9		+7.3		+ 9.4		+10.4

* (1970=100)

Source: US Department of Labor Bureau of Labor Statistics.

Robert W. Baird & Co. Inc.

Prices for selected types of construction equipment began to moderate in 1981. The trend towards moderation continued through the first eleven months of 1982.

Actual Shipments	% Change
$ 1.664	
1.877	+12.8%
1.851	− 1.4
1.973	+ 6.6
2.375	+20.4
2.913	+22.9
3.450	+18.4
3.975	+10.6
4.024	+ 1.2
4.736	+17.7
5.761	+21.6
5.926	+ 2.4
5.602	− 5.5
5.689	+ 1.6
3.809	−33.1
4.650	+22.5

Approximate Size as a % of 1981 SIC 3531	CGF Model
5%	no
18	yes
31	yes
—	—
4	yes
16	yes
26	no
100%	

.....CP-1400	NA	Std.	141.5	149.6	281	35,802	44,000	Cat 3406DITA	D	893	T,CC	344@1900	....	80/136.4	24.5x32[4]	8	TD ..... PS,CM	12	2	2.4-16.5	3.0-5.1	Yes	NLS	Opt.	NLS	NA	F	F
.....KP-1400	NA	Std.	141.5	149.6	281	35,802	44,000	Cum NTA-855-A	D	855	T,CC	349@1900	....	80/136.4	24.5x32[4]	8	Allison CLT-5961 ..... PS,CM	12	2	2.4-16.5	3.0-5.1	Yes	NLS	Opt.	NLS	NA	F	F
Tiger.....ST-450	NA	Std.	150	161	289	40,200	50,000	Cat 3406DITA	D	1099	T,CC	355 hp*	....	85/160.3	30.5x32[4]	10	Allison CLT-5961 .... PS,CM,P	6	1	3.3-19.8	2.6	Yes	NLS	Opt.	NLS	NA	F	F
.....ST-450	NA	Std.	150	161	289	40,700	50,000	Cum ... NTA-1150-A	D	1150	T,CC	387.3@1677	....	85/160.3	30.5x32[4]	10	..... PS,CM,P	6	1	3.3-19.8	2.6	Yes	NLS	Opt.	NLS	NA	F	F
VERSATILE																															
.....160	NA	Std.	80	109	150	8050	8950	Wauk.....VRD-220	D	220	T	....	65@2500*	62/84	13.6x24	6	Eaton..... HS	Inf.	Inf.	0-17.7	0-17.7	Yes	NLS	NA	NLS	NA	SH	SH
.....555	NA	Std.	120	134	249.6	16,800	25,000	Cum 555	D	555	T	153.9@2850	184.3@2850	60/120	18.4x38[4]	8	Versatile.....CM	15	5	1.9-17.2	3-5.5	No	NLS	Opt.	NLS	NA	SH	SH
.....835	NA	Std.	130	137.7	253	20,560	28,000	Cum 855	D	855	T	179 hp	198@2100	72/118	18.4x38[4]	8	Versatile.....CM	12	4	2.6-14.3	3.4-5.2	No	NLS	Opt.[11]	NLS	Opt.	F	F
.....875	NA	Std.	130	140.2	253	21,550	29,500	Cum 855	D	855	T	222 hp	247@2100	72/122	20.8x38[4]	8	Versatile.....CM	12	4	2.6-14.3	3.4-5.2	No	NLS	Opt.	NLS	Opt.	F	F
.....895	NA	Std.	130	140.2	253	23,240	32,500	Cum 855	D	855	T,CC	261.4@2100	....	72/122	20.8x38[4]	8	Versatile.....CM	12	4	2.6-14.3	3.4-5.2	No	NLS	Opt.	NLS	Opt.	F	F
.....945	NA	Std.	130	140.2	253	23,240	32,500	Cum 855	D	855	T,CC	268@2100*	....	72/122	20.8x38[4]	8	Versatile.....CM	12	4	2.6-14.3	3.4-5.2	No	NLS	Opt.	NLS	Opt.	F	F
.....955	NA	Std.	130	139.7	253	24,660	36,000	Cum 855	D	855	T,CC	280@2100	....	72/122	24.5x32[4]	10	TD.....PS	12	4	2.3-16.2	2.9-8.4	Yes	NLS	Opt.	NLS	Opt.	F	F
.....975	NA	Std.	130	139.7	253	24,260	36,000	Cum 855	D	855	T,CC	288@2100*	....	72/127	24.5x32[4]	10	Versatile.....CM	12	4	2.6-14.3	3.4-5.2	No	NLS	Opt.	NLS	Opt.	F	F
WHITE																															
.....4-270	NA	Std.	129.5	124	256	....	....	Cat 3306	D	638	T,CC	270@2100[8]	....	66/124	24.5x32[8]	10	..... PS,CM,HG	16	4	1.9-19.1	2.9-5.0	Yes	....	Std.	....	NA	....	....

ABBREVIATIONS:
AC—Allis-Chalmers
Bel—Belarus
Cat—Caterpillar
CC—Charge Cooled
CM—Constant Mesh
Cum.—Cummins
D—Diesel
DDA—Detroit Diesel Allison
F—Flange
G—Gas
HG—Helical Gear
HS—Hydrostatic
IH—International Harvester
Inf.—Infinite
JD—John Deere
LS—Limited Slip
NA—Not Available
NAs—Naturally Aspirated
NLS—Non-Limited Slip
Opt.—Optional
P—Planetary
Par.—Partial
PH—Planetary Hub Outboard
PS—Power Shift
SG—Sliding Gear
SH—Sliding Hub
SM—Synchromesh
Std.—Standard
T—Turbo
TD—Twin Diesel
Wauk—Waukesha

FOOTNOTES:
*—Estimate
1—3 powershifts in each of 4 ranges
2—Depending on tire selection
3—Thru—30.5 x 32 in.
4—Duals
5—Allison—Fully automatic also available
6—Mfg. rated engine hp
7—With 18.4 x 38 in., tread varies according to tire selection
8—With 23.1 x 34 in. Duals
9—Duals available: 18.4 x 38 in. thru 24.5 x 32 in., inner: 60-78 in., outer: 108-125 in.
10—With 30.5 x 32 single tires
11—No spin option available
12—Front

US FARM EQUIPMENT SALES & FORECAST

	1980 Sales	1981 Sales	% Change 1980-81	1982 Sales	% Change 1981-82	1983 Forecast	% Change '82-'83	1984 Forecast	% Change '83-'84
Self-Propelled Combines	25,760	26,830	+4.2%	16,208	−39.6%	17,000	+4.9%	20,000	+17.6%
Balers (under 200 lbs)	14,022	13,609	−2.9	8,898	−34.8	8,900	NC	9,900	+11.2
Forage Harvesters (shear bar type)	9,461	7,603	−19.6	5,140	−32.4	5,550	+8.0	6,150	+10.8
Mower Conditioners	19,452	18,522	−4.8	13,985	−24.5	14,250	+1.9	15,800	+10.9

Source: Farm and Industrial Equipment Institute

US FARM TRACTOR RETAIL SALES % FORECAST

	1981 Sales	1982 Sales	% Change 1981-82	1983 Forecast	% Change 1982-83	1984 Forecast	% Change 1983-84
Two Wheel Drive 40-100 hp	50,973	41,134	−19.3%	42,500	+3.3%	45,000	+5.9%
Two Wheel Drive Over 100 hp	43,179	29,247	−32.3%	31,000	+6.0%	34,000	+9.7%
Four Wheel Drive	9683	6763	−30.2%	7150	+5.7%	7850	+9.8%
Total Tractors	103,835	77,144	−25.7%	80,650	+4.5%	86,850	+7.7%

Source: Farm and Industrial Equipment Institute

VALUE OF CONSTRUCTION EQUIPMENT SHIPMENTS 1979-1982
(in $1,000)

	1979 Shipments	1980 Shipments	% Change '79-'80	1981 Shipments	% Change '80-'81	1982 Shipments	% Change '81-'82
O.H. Wheel Tractors	547,115	487,950	−10.8%	476,593	−2.3%	277,695	−41.7%
Mixers, Pavers & Related Equip.	417,867	398,430	− 4.7	359,117	−9.9	277,212	−22.8
Wheel Loaders	1,472,097	1,456,056	− 1.1	1,398,451	−4.0	920,228	−34.2
Scrapers, Graders, Rollers & Other O-H Equip.	2,237,799	1,632,848	−27.0	1,699,858	+4.1	1,031,635	−39.3
TOTAL	4,674,878	3,975,284	−15.0	3,934,019	−1.0	2,506,770	−36.3

Source: US Dept. of Commerce

NEW PRIVATELY OWNED HOUSING UNITS STARTED—ANNUAL RATE
(thousands of units)

	1981	1982	% change '81-'82	1983	% change '82-'83
January	1,588	877	−44.8%	1,707	+94.6%
February	1,279	911	−28.8	1,756	+92.7
March	1,305	920	−29.5	1,611	+75.1
April	1,332	911	−31.6	—	
May	1,150	1,028	−10.6	—	
June	1,047	910	−13.1	—	
July	1,035	1,185	+14.5	—	
August	949	1,046	+10.2	—	
September	900	1,134	+26.0	—	
October	866	1,142	+31.9	—	
November	839	1,361	+62.2	—	
December	906	1,280	+41.3	—	

Seasonally adjusted annual rate
Source: US Dept. of Commerce